CLAIMS:

1. A method comprising:

receiving a digital signal, wherein the digital signal contains robust VSB data, and wherein the digital signal further contains a map permitting a receiver to process the robust VSB data, wherein the robust VSB data contains a duplicate of the map; and,

processing the robust VSB data and the duplicate of the map in response to the map.

2. The method of claim 1 wherein the map contains information indicating which robust VSB data has been outer coded at different rates, and wherein the processing of the robust VSB data comprises decoding the robust VSB data based upon the different outer coding rates indicated by the map.

3. The method of claim 1 wherein the map indicates the location of the robust VSB data in the digital data, and wherein the processing of the robust VSB data comprises processing the robust VSB data based upon the location of the robust VSB data as indicated by the map.

4. The method of claim 1 wherein the map contains information indicating that the digital signal contains first and second robust VSB data, wherein the first robust VSB data has been outer coded at a first rate, wherein the second robust VSB data has been outer coded at a second rate, wherein the map contains further information indicating location of the first and second robust VSB data, and wherein the processing of the robust VSB data comprises decoding the first and second robust VSB data based upon the respective first and second outer coding rates indicated by the map.

5. The method of claim 1 wherein the processing of the robust VSB data comprises correlating multiple transmissions of the map.

6. The method of claim 1 wherein the duplicate of the map also contains data indicating when in the future the map will change.

7. The method of claim 1 wherein the duplicate of the map also contains a new map to be transmitted in the future.

8. The method of claim 7 wherein the duplicate of the map also contains data indicating when in the future the new map will be transmitted.

9. The method of claim 1 wherein the map contains information indicating which of the robust VSB data has been outer coded at a first coding rate, which of the robust VSB data has been outer coded at a second coding rate, and which of the robust VSB data has been

outer coded at a third coding rate, wherein the map comprises first, second, and third portions, wherein the first portion indicates where in the digital signal the robust VSB data having the first coding rate can be found, wherein the second portion indicates where in the digital signal the robust VSB data having the second coding rate can be found, and wherein the third portion indicates where in the digital signal the robust VSB data having the third coding rate can be found.

10. The method of claim 9 wherein the map comprises fifty-four symbols, wherein the first portion comprises a first eighteen of the fifty-four symbols, wherein the second portion comprises a second different eighteen of the fifty-four symbols, and wherein the third portion comprises a third different eighteen of the fifty-four symbols.

11. The method of claim 10 wherein the first, second, and third eighteen symbols each comprise:

six symbols designated as G indicating where in the digital signal the robust VSB data having corresponding one of the first, second, and third coding rates can be found;

six symbols designating the complement of G; and,

six unspecified symbols.

12. The method of claim 11 wherein the map is contained in the frame sync segment of an ATSC frame just before the twelve precoding symbols of the frame sync segment.

13. The method of claim 9 wherein the first, second, and third portions each comprise:

first symbols designated as G indicating where in the digital signal the robust VSB data having corresponding one of the first, second, and third coding rates can be found;

second symbols designating the complement of G; and,

third unspecified symbols.

14. An apparatus comprising:

a receiver that receives a digital signal, wherein the digital signal contains a frame of first and second 8 VSB data, wherein the first and second 8 VSB data have different bit rates, wherein the digital signal further contains a map, wherein the map contains information indicating a location of at least one of the first and second 8 VSB data in the frame;

a decoder that decodes the digital signal; and,

a processor that processes the first 8 VSB data according to the location information contained in the map.

15. The apparatus of claim 14 wherein the map contains information indicating which of the first 8 VSB data has been outer coded at different rates, and wherein the processor is arranged to decode the first 8 VSB data based upon the different outer coding rates indicated by the map.

16. The apparatus of claim 14 wherein the map contains information indicating that the digital signal contains first and second groups of the first 8 VSB data, wherein the first group has been outer coded at a first rate, wherein the second group has been outer coded at a second rate, wherein the map contains further information indicating location of the first and second groups, and wherein the processor is arranged to decode the first and second groups based

upon the respective first and second outer coding rates indicated by the map.

17. The apparatus of claim 16 wherein the processor is arranged to correlate multiple transmissions of the map.

18. The apparatus of claim 14 wherein the frame comprises an ATSC frame containing a frame sync segment and multiple data segments, wherein the bit rate of the first data is lower than the bit rate of the second data, and wherein the first data are included within one of the data segments and contain a duplicate of the map.

19. The apparatus of claim 18 wherein the one of the data segments also contains data indicating when in the future the map will change.

20. The apparatus of claim 18 wherein the one of the data segments also contains a new map to be transmitted in the future.

21. The apparatus of claim 20 wherein the one of the data segments also contains data indicating when in the future the new map will be transmitted.

22. The apparatus of claim 14 wherein the frame contains multiple segments, wherein a first segment contains the map, and wherein a second segment contains data indicating when in the future the map will change.

23. The apparatus of claim 22 wherein the apparatus is arranged to maintain a count related to when the map will change and to countdown from the count when digital data containing additional maps is received and is not received.

24. The apparatus of claim 14 wherein the frame contains multiple segments, wherein a first segment contains the map, and wherein a second segment contains a new map to be transmitted in the future.

25. The apparatus of claim 24 wherein the second segment also contains data indicating when in the future the new map will be transmitted.

26. The apparatus of claim 14 wherein the frame contains m data segments, wherein the map designates a predetermined plurality of the data segments, and wherein the processor locates the first 8 VSB data in the predetermined segments.

27. The apparatus of claim 26 wherein the map comprises a number from zero to n, and wherein n is evenly divisible into m.

28. The apparatus of claim 27 wherein n is 39.

29. The apparatus of claim 28 wherein, if n is 39, the m data segments contain only the first 8 VSB data.

30. The apparatus of claim 26 wherein the map contains information indicating that the digital signal contains first and second groups of the first 8 VSB data, wherein the first group has been outer coded at a first rate, wherein the second group has been outer coded at a second rate, wherein the processor is arranged to decode the first and second groups based upon the respective first and second outer coding rates indicated by the map, wherein the map comprises a first number from zero to n indicating a first subset of the predetermined segments containing the first group, wherein the map comprises a second number from zero to n indicating a second subset of the predetermined segments containing the second group, wherein the first number plus the second number is less than or equal to n, and wherein n is evenly divisible into m.

31. The apparatus of claim 26 wherein the map contains information indicating that the digital signal contains first, second, and third groups of the first 8 VSB data, wherein the first group has been outer coded at a first rate, wherein the second group has been outer coded at a second rate, wherein the third group has been outer coded at a third rate, wherein the processor is arranged to decode the first, second, and third groups based upon the respective first, second, and third outer coding rates indicated by the map, wherein the map comprises a first number from zero to n indicating a first subset of the predetermined segments containing the first group, wherein the map comprises a second number from zero to n indicating a second subset of the predetermined segments containing the second group, wherein the map comprises a third number from zero to n indicating a third subset of the predetermined segments containing the third group, wherein the first number plus the

second number plus the third number is less than or equal to n, and wherein n is evenly divisible into m.

32. The apparatus of claim 14 wherein the map contains information indicating which of the first 8 VSB data has been outer coded at a first coding rate, which of the first 8 VSB data has been outer coded at a second coding rate, and which of the first 8 VSB data has been outer coded at a third coding rate, wherein the map comprises first, second, and third portions, wherein the first portion indicates where in the digital signal the first 8 VSB data having the first coding rate can be found, wherein the second portion indicates where in the digital signal the first 8 VSB data having the second coding rate can be found, and wherein the third portion indicates where in the digital signal the first 8 VSB data having the third coding rate can be found.

33. The apparatus of claim 32 wherein the map comprises fifty-four symbols, wherein the first portion comprises a first eighteen of the fifty-four symbols, wherein the second portion comprises a second different eighteen of the fifty-four symbols, and wherein the third portion comprises a third different eighteen of the fifty-four symbols.

34. The apparatus of claim 33 wherein the first, second, and third eighteen symbols each comprise:

six symbols designated as G indicating where in the digital signal the first 8 VSB data having the corresponding one of the first, second, and third coding rates can be found;

six symbols designating the complement of G; and,

six unspecified symbols.

35. The apparatus of claim 34 wherein the map is contained in a frame sync segment of an ATSC frame just before the twelve precoding symbols of the frame sync segment.

36. The apparatus of claim 32 wherein the first, second, and third portions each comprise:

first symbols designated as G indicating where in the digital signal the first 8 VSB data having the corresponding one of the first, second, and third coding rates can be found;

second symbols designating the complement of G; and,

third unspecified symbols.

37. An electrical signal comprising a map, first data symbols, and second data symbols, wherein the first and second data symbols have the same constellation, wherein the first and second data symbols have different bit rates, wherein the first and second data symbols are intermixed in a data frame, and

wherein the map contains information indicating a location of at least one of the first and second 8 VSB data in the electrical signal.

38. The electrical signal of claim 37 wherein the first 8 VSB data comprises first and second portions, wherein the first portion of 8 VSB data results from coding at a first coding rate, wherein the second portion of 8 VSB data results from coding at a second coding rate, and wherein the map contains information indicating that the first and second portions of 8 VSB data have been outer coded at the different coding rates.

39. The electrical signal of claim 38 wherein the map contains information indicating location of the first and second portions of 8 VSB data in the electrical signal.

40. The electrical signal of claim 37 further comprising a duplicate of the map.

41. The electrical signal of claim 40 further comprising information indicating when in the future the map will change.

42. The electrical signal of claim 40 further comprising a new map to be transmitted in the future.

43. The electrical signal of claim 42 further comprising information indicating when in the future the new map will be transmitted.

44. The electrical signal of claim 37 further comprising a new map to be transmitted in the future.

45. The electrical signal of claim 37 further comprising a frame of data, wherein the frame contains multiple segments, wherein the map indicates which segments contain the first 8 VSB data, and

wherein the second 8 VSB data are distributed in at least some of any remaining segments.

46. The electrical signal of claim 45 wherein the frame contains m data segments, wherein the map comprises a number from zero to n and wherein n is evenly divisible into m.

47. The electrical signal of claim 46 wherein n is 39.

48. The electrical signal of claim 47 wherein, if n is 39, the frame contains only the first 8 VSB data.

49. The electrical signal of claim 46 wherein the first 8 VSB data contains first and second portions of 8 VSB data, wherein the first portion of 8 VSB data is outer coded at a first coding rate, wherein the second portion 8 VSB data is outer coded at a second, different coding rate, wherein the map

comprises a first number from zero to n indicating a first subset of the predetermined segments containing the first portion of 8 VSB data, wherein the map comprises a second number from zero to n indicating a second subset of the predetermined segments containing the second portion of 8 VSB data, wherein the first number plus the second number is less than or equal to n, and wherein n is evenly divisible into m.

50. The electrical signal of claim 46 wherein the first 8 VSB data contains first, second, and third portions of 8 VSB data, wherein the first portion of 8 VSB data is outer coded at a first coding rate, wherein the second portion 8 VSB data is outer coded at a second coding rate, wherein the third portion 8 VSB data is outer coded at a third coding rate, wherein the map comprises a first number from zero to n indicating a first subset of the predetermined segments containing the first portion of 8 VSB data, wherein the map comprises a second number from zero to n indicating a second subset of the

predetermined segments containing the second portion of 8 VSB data, wherein the map comprises a third number from zero to n indicating a third subset of the predetermined segments containing the third portion of 8 VSB data, wherein the first number plus the second number plus the third number is less than or equal to n, and wherein n is evenly divisible into m.

51. The electrical signal of claim 50 wherein n is 39.

52. The electrical signal of claim 51 wherein, if n is 39, the frame contains only the first, second, and third portions of 8 VSB data.

53. An apparatus comprising:

a receiver that receives a digital signal, wherein the digital signal contains a frame of first and second 8 VSB data, wherein the first and second 8 VSB data have the same constellation, wherein the first and second 8 VSB data have different bit rates, wherein

the digital signal further contains a map, wherein the map contains information indicating a location of the first 8 VSB data in the frame;

a decoder that decodes the digital signal; and,

a processor that discards the second VSB data and that processes the first 8 VSB data.

54. The apparatus of claim 53 wherein the first 8 VSB data are robust VSB data, and wherein the second 8 VSB data are ATSC data.

55. The apparatus of claim 53 wherein the first 8 VSB data are ATSC data, and wherein the second 8 VSB data are robust VSB data.

56. The apparatus of claim 53 wherein the frame contains a duplicate of the map.

57. The apparatus of claim 56 wherein the frame also contains data indicating when in the future the map will change.

58. The apparatus of claim 56 wherein the frame also contains a new map to be transmitted in the future.

59. The apparatus of claim 58 wherein the frame also contains data indicating when in the future the new map will be transmitted.

60. The apparatus of claim 53 wherein the frame contains data indicating when in the future the map will change.

61. The apparatus of claim 53 wherein the frame contains a new map to be transmitted in the future.

62. The apparatus of claim 61 wherein the frame also contains data indicating when in the future the new map will be transmitted.

63. The apparatus of claim 53 wherein the first 8 VSB data contains first and second portions of 8 VSB data, wherein the first portion of 8 VSB data is outer coded at a first coding rate, wherein the second portion 8 VSB data is outer coded at a second, different coding rate, wherein the frame contains m data segments, wherein the map comprises a first number from zero to n indicating a first subset of the predetermined segments containing the first portion of 8 VSB data, wherein the map comprises a second number from zero to n indicating a second subset of the predetermined segments containing the second portion of 8 VSB data, wherein the first number plus the second number is less than or equal to n, and wherein n is evenly divisible into m.

64. The apparatus of claim 53 wherein the first 8 VSB data contains first, second, and third portions of 8 VSB data, wherein the first portion of 8 VSB data is outer coded at a first coding rate, wherein the second portion 8 VSB data is outer coded at a second coding rate, wherein the third portion 8 VSB data is outer coded at a third coding rate, wherein the frame contains m data segments, wherein the map comprises a first number from zero to n indicating a first subset of the predetermined segments containing the first portion of 8 VSB data, wherein the map comprises a second number from zero to n indicating a second subset of the predetermined segments containing the second portion of 8 VSB data, wherein the map comprises a third number from zero to n indicating a third subset of the predetermined segments containing the third portion of 8 VSB data, wherein the first number plus the second number plus the third number is less than or equal to n, and wherein n is evenly divisible into m.

65. The apparatus of claim 64 wherein n is 39.

66. The apparatus of claim 65 wherein, if n is 39, the frame contains only the first, second, and third portions of 8 VSB data.

67. The apparatus of claim 64 wherein a first section of the map comprises eighteen symbols designating the first subset of the predetermined segments containing the first portion of 8 VSB data, wherein a second section of the map comprises eighteen symbols designating the second subset of the predetermined segments containing the second portion of 8 VSB data, and wherein a third section of the map comprises eighteen symbols designating the third subset of the predetermined segments containing the third portion of 8 VSB data.

68. The apparatus of claim 67 wherein the eighteen symbols of the first, second, and third sections each comprise:

six symbols designated as G designating the predetermined segments;

six symbols designating the complement of G; and,

six unspecified symbols.

69. The apparatus of claim 68 wherein the map is contained in the frame sync segment of an ATSC frame just before the twelve precoding symbols of the frame sync segment.

70. An apparatus comprising:

a receiver that receives a digital signal, wherein the digital signal contains a frame of robust VSB data, ATSC data, or both, wherein at least the ATSC data has PID numbers associated therewith, wherein the digital signal further contains a map, wherein the map

contains information indicating a location of the robust VSB data in the frame;

a first processor that processes the robust VSB data based upon the map; and,

a second processor that processes the ATSC data based upon PID numbers.

71. The apparatus of claim 70 wherein the frame contains a duplicate of the map.

72. The apparatus of claim 71 wherein the frame also contains data indicating when in the future the map will change.

73. The apparatus of claim 71 wherein the frame also contains a new map to be transmitted in the future.

74. The apparatus of claim 73 wherein the frame also contains data indicating when in the future the new map will be transmitted.

75. The apparatus of claim 70 wherein the frame contains data indicating when in the future the map will change.

76. The apparatus of claim 70 wherein the frame contains a new map to be transmitted in the future.

77. The apparatus of claim 76 wherein the frame also contains data indicating when in the future the new map will be transmitted.